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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/791,828	03/04/2004	Leping Li	635.43617X00	3640
20457	7590	04/11/2006		
ANTONELLI, TERRY, STOUT & KRAUS, LLP 1300 NORTH SEVENTEENTH STREET SUITE 1800 ARLINGTON, VA 22209-3873			EXAMINER KOEHLER, CHRISTOPHER M	
			ART UNIT 3726	PAPER NUMBER

DATE MAILED: 04/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/791,828	LI ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Christopher M. Koehler	3726	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)  Responsive to communication(s) filed on 28 March 2006.

2a)  This action is **FINAL**.                            2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

4)  Claim(s) 1-15 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5)  Claim(s) \_\_\_\_\_ is/are allowed.

6)  Claim(s) 1-15 is/are rejected.

7)  Claim(s) \_\_\_\_\_ is/are objected to.

8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on 19 March 2004 is/are: a)  accepted or b)  objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All   b)  Some \* c)  None of:  
1.  Certified copies of the priority documents have been received.  
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)  Notice of References Cited (PTO-892)  
2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3)  Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 3/4/04.

4)  Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_ .  
5)  Notice of Informal Patent Application (PTO-152)  
6)  Other: \_\_\_\_ .

**DETAILED ACTION**

***Election/Restrictions***

1. Claims 16-28 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected group, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on March 28, 2006.

***Drawings***

2. Figures 1 and 2A-2C should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Specification***

3. The disclosure is objected to because of the following informalities:  
4. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification. Some examples of necessary corrections can be found on page 22, lines

21-22 wherein the reference numerals are misprinted as 82, 86 and 88 in reference to elements 92, 96 and 98.

Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Gitis et al (US Patent No. 6,494,765).

7. Regarding claim 1, Gitis teaches a method of polishing a semiconductor workpiece comprising, providing a substrate (74 figure 10) having a substantially flat surface (80), removing material from the surface (80) by moving the surface of the substrate relative to, on and along a polishing surface (96), said moving including a rotation about an axis (x-x) by a shaft driven in a predetermined manner, providing along the shaft a shaft section (140 figure 13) having a predetermined torque/deformation characteristic, said characteristic independent of the torque/deformation characteristic of the shaft, monitoring the deformation of the shaft section as a torque indicative signal, via strain gauge, controlling the removing in dependency of the torque indicative signal and manufacturing the workpiece from the substrate having the material removed (abstract).

8. Regarding claim 2, Gitis teaches that the shaft carries the substrate (figure 10).

9. Regarding claim 3, Gitis teaches that the substrate has at least one material interface between two different materials and substantially parallel to the surface, thereby monitoring when the removing reaches the interface by the monitoring of the deformation (col. 9, lines 14-32).
10. Regarding claim 4, Gitis teaches that the controlling comprises disabling the removing when the new material, or new coefficient of friction, is detected (col. 9, lines 14-32 and abstract).
11. Regarding claims 5 and 6, Gitis teaches that the monitoring of the deformation is performed by strain gauges in an arrangement mounted to the section and generating an electrical output signal (col. 11, line 61-col. 12, line 14).
12. Regarding claim 8, Gitis teaches providing at least part of the shaft with a first hollow inner space (center hole through plate member 142 in figure 13) and providing at least part of the section with a second hollow inner space (created by thin walled section 146 of figure 13 having a larger outer diameter and occupying the inner space between plates 142 and 144 sharing the axis of hole through 142 and 144), the inner spaces being in communication with one another, monitoring the deformation with a sensor arrangement (strain gauges, col. 11, line 61-col. 12, line 3) mounted on the section and generating an electric output signal and transmitting a signal dependent on the output signal to a system stationary with respect to the rotating section through the first and second hollow spaces being in communication (col. 11, line 61-col. 12, line 38).
13. Regarding claim 9, Gitis teaches providing at least part of the shaft with a first hollow inner space (center hole through plate member 142 in figure 13) and providing at

least part of the section with a second hollow inner space (created by thin walled section 146 of figure 13 having a larger outer diameter and occupying the inner space between plates 142 and 144 sharing the axis of hole through 142 and 144), the inner spaces being in communication with one another, monitoring the deformation by a sensor arrangement (strain gauges, col. 11, line 61-col. 12, line 3) mounted on the section and providing an electric supply to the sensor arrangement via the first and second hollow spaces in communication (col. 11, line 61-col. 12, line 38).

14. Regarding claim 7, Gitis teaches transmitting a signal dependent on the output signal from the rotating section to a system which is stationary with respect to the section and performing analog to digital signal conversion of a signal dependent on the output signal before performing the transmitting (col. 12, lines 4-38).

15. Regarding claims 10 and 11, Gitis teaches monitoring the deformation by means of a sensor arrangement mounted on the section and generating an electric output signal, transmitting a signal dependent from the electric out put signal from the rotating section to a system stationary with respect to the section via a slide contact arrangement (col. 12, lines 15-38).

16. Regarding claim 12, Gitis teaches that the shaft section has an outer diameter less than the outer diameter of the shaft.

17. Regarding claim 13, Gitis teaches that the workpiece is a semiconductor workpiece (abstract).

18. Regarding claim 14, Applicant defines that a low-scale or ultra-low-scale device microelectronic workpiece is a semiconductor workpiece on page 12, lines 21-25.

Therefore the teaching of Gitis that the workpiece is a semiconductor is sufficient for this limitation.

19. Regarding claim 15, Gitis teaches performing the removal by chemical mechanical polishing thereby applying slurry to the polishing surface (col. 10, lines 28-48).

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher M. Koehler whose telephone number is (571) 272-3560. The examiner can normally be reached on Mon.-Fri. 7:30A-4:00P.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, George Nguyen can be reached on (571) 272-4491. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CMK



GEORGE NGUYEN  
PRIMARY EXAMINER